UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,503	03/14/2001	James Gordon McLean	1950P/RPS920000112	3604

7590 07/19/2004

SAWYER LAW GROUP
P.O. Box 51418
Palo Alto, CA 94303

EXAMINER
BRANT, DMITRY

ART UNIT	PAPER NUMBER
2655	7

DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/808,503	MCLEAN, JAMES GORDON	
	Examiner	Art Unit	
	Dmitry Brant	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) ~~1-5~~ 1-4, *8-10, 14-16, 20-22 and 26-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) ~~1-4~~ is/are allowed.

6)☒ Claim(s) ~~1-5~~, *8-10, 14-16, 20-22, 26-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., overall loudness level, the loudness trend, temp, etc.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Here, Applicant claims that Zampini et al. do not teach "storing the characteristics of the digital audio files." According to Applicant, "storing the characteristics of the digital audio files" is not analogous to storing crossfading settings, as taught by Zampini et al. Applicant's Specification discloses an embodiment where a user manually selects appropriate fade-in and fade-out characteristics of each song, which are then stored in a file (Page 6).

However, Zampini et al. do include storing custom crossfade curves for future use (Col. 6, lines 33-51 and Col. 8, lines 54-58). As it is well-known in the art, these curves necessarily must include at least some of the characteristics disclosed by Applicant (loudness, temp, etc.) Additionally, these custom curves must originate from at least two audio files. The user of Zampini's system would begin working with two songs, then adjust the fade-in and fade out settings for these songs and finally save the resulting custom crossfading configuration, which could be later used with other songs. (Col. 8, line 54-58). Therefore, the crossfading curve would implicitly incorporate the

characteristics of the first and second songs and Zampini's system would save these characteristics in permanent memory. Since the crossfading curve of Zampini's system explicitly manipulates the fade-in and fade-out characteristics of the two songs, it would contain the final fade-in and fade-out settings, which in Applicant's case, are manually entered by a user of the system.

Applicant incorporated claim 5 into independent claims 1, 10, 16, 22, 28-31. However, in view of the reasons listed above, the 35 USC 103(a) rejections remain and, as a result, the newly amended claims and their dependent claims are rejected for the same reasons as in the first Office Action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 8-10, 14-15, 28, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sone (5,919,047) in view of Zampini et al. (5,488,669)

As per claims 1 and 28, Sone discloses:

A method for cross-fading digital audio, comprising the steps of: (a) determining a plurality of characteristics for a first and a second digital audio files and (b) associating the plurality of	Differences in musical properties, such as volume and rhythm between the preceding and the succeeding files are extracted (**Col. 8,**

characteristics with the first and the second digital audio files	**lines 50-55)**
(c) automatically determining an appropriate cross-fading method for the first and the second digital audio files based upon the plurality of characteristics when the first and the second digital audio files are to be cross-faded	Based on the difference extraction, optimal linking mode is selected **(Col. 8, lines 55-57)**
(d) automatically cross-fading the first and the second digital audio files in accordance with the cross-fading method.	**(elem. S25, Fig. 6)** and **(Col. 8, lines 57-60)**

Sone does not disclose "storing the plurality of characteristics in at least one characteristics file associated with the first or the second digital audio file."

Zampini teaches "storing" user-defined cross-fading settings (Col. 4, lines 53-56) and (Col. 8, lines 54-58). This configuration is stored in non-volatile memory of the computer (Col. 5, line 1) and hence, inherently, can be in the form of computer files.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone as taught by Zampini, in order to maintain a permanent record of user settings associated with audio file cross-fading. This would allow the user to import, export and re-use the same settings for multiple audio files, thus greatly enhancing the usability of the system. Additionally, file characteristics stored in MP3 tags would simplify system's task in choosing appropriate cross-fading mode.

As per claims 2,8-9, Sone discloses the following limitations:

Claim#	Limitations	Sone
2	The method of claim 1, wherein the determining step (a) comprises: (a1) determining the plurality of characteristics by a user for the first and the second digital audio files.	The mode selection may be performed by the user (**Col. 9, lines 2-3**)
8	The method of claim 1, wherein the automatically determining step (c) comprises:	
	(c1) comparing an ending characteristic for the first digital audio file with a beginning characteristic for the second digital audio file;	The trailing end of "sabi" section is compared with the leading piece of the next sabi section (**Col. 8, lines 48-55**)
	(c2) determining the appropriate cross-fading method based upon the comparing step (c1);	Based on the difference extraction, optimal linking mode is selected (**Col. 8, lines 55-57**)
	(c3) calculating a fade-out start time or an ending time for the first digital audio file; (c5) defining a start time for the second digital audio file; and	The end time for first song and start time for the second songs are determined (**FIG. 2**) by "sabi" markers that signify the beginning and ends of the cross-fading sections, because sabi pieces do not get altered in cross-fading and thus specify ultimate bounds for the cross-fading section.
	(c4) defining an envelope for the first digital audio file;	**FIG. 7(B)** shows the first and

	(c6) defining an envelope for the second digital audio file.	second songs' envelopes, where cross-fading is performed by matching the volume envelopes (Col. 9, lines 31-36), i.e. decreasing the volume of first song and slowly increasing the volume of the second song.
9	The method of claim 1, wherein the automatically cross-fading step (d) comprises: (d1) fading out or ending the first digital audio file according to an envelope of the first digital audio file when a fade-out time or an ending time is reached; and (d2) starting or fading in the second digital audio file according to an envelope of the second digital audio file when a start time is reached.	**FIG. 7(B)** shows the first and second songs' envelopes, where cross-fading is performed by matching the volume envelopes (Col. 9, lines 31-36), i.e. decreasing the volume of first song until it ends and slowly increasing the volume of the second song until the "sabi" section of the second song is reached.

As per claim 10, Sone discloses:

A method for cross-fading digital audio, comprising the steps of: (a) determining a plurality of characteristics by a user for a first and a second digital audio files and (b) associating the plurality of characteristics with the first and the second digital audio files	Differences in musical properties, such as volume and rhythm between the preceding and the succeeding files are extracted (**Col. 8, lines 50-55**). In addition, the mode selection may be performed by the user (Col.

	9, lines 2-3)
(c) automatically determining an appropriate cross-fading method for the first and the second digital audio files based upon the plurality of characteristics when the first and the second digital audio files are to be cross-faded	Based on the difference extraction, optimal linking mode is selected **(Col. 8, lines 55-57)**
(d) automatically cross-fading the first and the second digital audio files in accordance with the cross-fading method.	**(elem. S25, Fig. 6)** and **(Col. 8, lines 57-60)**

Sone does not disclose "storing the plurality of characteristics in at least one characteristics file associated with the first or the second digital audio file."

Zampini teaches "storing" user-defined cross-fading settings (Col. 4, lines 53-56) and (Col. 8, lines 54-58). This configuration is stored in non-volatile memory of the computer (Col. 5, line 1) and hence, inherently, can be in the form of computer files.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone as taught by Zampini, in order to maintain a permanent record of user settings associated with audio file cross-fading. This would allow the user to import, export and re-use the same settings for multiple audio files, thus greatly enhancing the usability of the system. Additionally, file characteristics stored in MP3 tags would simplify system's task in choosing appropriate cross-fading mode.

As per claims 14 and 15, Sone discloses the following limitations:

14	The method of claim 10, wherein the automatically determining step (c) comprises:	
	(c1) comparing an ending characteristic for the first digital audio file with a beginning characteristic for the second digital audio file;	The trailing end of "sabi" section is compared with the leading piece of the next sabi section (**Col. 8, lines 48-55**)
	(c2) determining the appropriate cross-fading method based upon the comparing step (c1);	Based on the difference extraction, optimal linking mode is selected (**Col. 8, lines 55-57**)
	(c3) calculating a fade-out start time or an ending time for the first digital audio file; (c5) defining a start time for the second digital audio file; and	The end time for first song and start time for the second songs are determined (**FIG. 2**) by "sabi" markers that signify the beginning and ends of the cross-fading sections, because sabi pieces do not get altered in cross-fading and thus specify ultimate bounds for the cross-fading section.
	(c4) defining an envelope for the first digital audio file; (c6) defining an envelope for the second digital audio file.	**FIG. 7(B)** shows the first and second songs' envelopes, where cross-fading is performed by matching the volume envelopes (**Col. 9, lines 31-36**), i.e. decreasing

		the volume of first song and slowly increasing the volume of the second song.
15	The method of claim 10, wherein the automatically cross-fading step (d) comprises: (d1) fading out or ending the first digital audio file according to an envelope of the first digital audio file when a fade-out time or an ending time is reached; and (d2) starting or fading in the second digital audio file according to an envelope of the second digital audio file when a start time is reached.	**FIG. 7(B)** shows the first and second songs' envelopes, where cross-fading is performed by matching the volume envelopes **(Col. 9, lines 31-36)**, i.e. decreasing the volume of first song until it ends and slowly increasing the volume of the second song until the "sabi" section of the second song is reached.

As per claim 31, Sone discloses:

A system, comprising: a first digital audio file; a second digital audio file;	Plurality of music pieces **(Col. 1, line 54-56)**
and a playing device, wherein the playing device determines a plurality of characteristics for the first and a second digital audio files, associates the plurality of characteristics with the first and the second digital audio files,	Differences in musical properties, such as volume and rhythm between the preceding and the succeeding files are extracted **(Col. 8, lines 50-55)**
automatically determines an appropriate cross-fading	Based on the difference extraction,

method for the first and the second digital audio files based upon the plurality of characteristics when the first and the second digital audio file s are to be cross-faded, and	optimal linking mode is selected **(Col. 8, lines 55-57)**
automatically cross-fades the first and the second digital audio files in accordance with the cross-fading method.	**(elem. S25, Fig. 6)** and **(Col. 8, lines 57-60)**

Sone does not disclose "storing the plurality of characteristics in at least one characteristics file associated with the first or the second digital audio file."

Zampini teaches "storing" user-defined cross-fading settings (Col. 4, lines 53-56) and (Col. 8, lines 54-58). This configuration is stored in non-volatile memory of the computer (Col. 5, line 1) and hence, inherently, can be in the form of computer files.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone as taught by Zampini, in order to maintain a permanent record of user settings associated with audio file cross-fading. This would allow the user to import, export and re-use the same settings for multiple audio files, thus greatly enhancing the usability of the system. Additionally, file characteristics stored in MP3 tags would simplify system's task in choosing appropriate cross-fading mode.

29,

4. Claims 3, 4, 16, 20, 21, 22, 26, 27, 30, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sone in view of Zampini et al. and further in view of Lee (6,278, 048).

As per claim 3, Sone discloses a karaoke device capable of medley playback using MIDI format (Col. 6, line 62). In addition, Sone discloses automatically analyzing the beginning of the last song with the beginning of the next song in order to determine if the characteristics (such as volume and rhythm) of the songs match (Col. 8, lines 48-55). Finally, FIG. 7(B) in Sone discloses the first and second songs' envelopes and their corresponding overlap in the cross-fade operation.

Neither Sone not Zampini et al. disclose "automatically decompressing" the beginning and the end of the music files, because his invention uses MIDI format.

Lee teaches the decoding of MP3 files for a playback on a karaoke device (Col. 2, lines 42-46)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone and Zampini et al. as taught in Lee to allow the karaoke device to use MP3 files instead of MIDI format. The use of compressed MP3 files would allow a karaoke machine to store more music files locally and, if necessary, download additional songs from the network, thus enhancing user experience. Because MP3 files are highly compressed, the system using MP3 files would inherently have to decompress at least parts of files in order to identify their characteristics (volume, rhythm, etc), as disclosed by Sone.

As per claim 4, Sone discloses a karaoke device capable of medley playback using MIDI format (Col. 6, line 62). In addition, Sone discloses automatically analyzing

the beginning of the last song with the beginning of the next song in order to determine if the characteristics (such as volume and rhythm) of the songs match (Col. 8, lines 48-55). Finally, Sone discloses preloading the characteristics of music data ahead of the actual playback (Col. 8, lines 24 - 28)

Neither Sone nor Zampini et al. disclose "automatically decoding" the beginning and the end of the music files.

Lee teaches the decoding of MP3 files for a playback on a karaoke device (Col. 2, lines 42-46)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone and Zampini et al. as taught by Lee to allow the karaoke device to use MP3 files instead of MIDI format. The use of compressed MP3 files would allow a karaoke machine to store more music files locally and, if necessary, download additional songs from the network, thus enhancing user experience. Because MP3 files are highly compressed, the system using MP3 files would inherently have to decode at least parts of the files in order to identify their characteristics (volume, rhythm, etc), as disclosed by Sone.

As per claims 16 and 29, Sone discloses:

- a karaoke device capable of medley playback using MIDI format (Col. 6, line 62).

- automatically analyzing the beginning of the last song with the beginning of the next song in order to determine if the characteristics (such as volume and rhythm) of the songs match (Col. 8, lines 48-55)
- Performing cross-fading, as shown in FIG. 7(B), where it is performed by matching the volume envelopes (Col. 9, lines 31-36), i.e. decreasing the volume of first song and slowly increasing the volume of the second song.

Sone does not disclose "storing the plurality of characteristics in at least one characteristics file associated with the first or the second digital audio file."

Zampini teaches "storing" user-defined cross-fading settings (Col. 4, lines 53-56) and (Col. 8, lines 54-58). This configuration is stored in non-volatile memory of the computer (Col. 5, line 1) and hence, inherently, can be in the form of computer files.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone as taught by Zampini, in order to maintain a permanent record of user settings associated with audio file cross-fading. This would allow the user to import, export and re-use the same settings for multiple audio files, thus greatly enhancing the usability of the system. Additionally, file characteristics stored in MP3 tags would simplify system's task in choosing appropriate cross-fading mode.

Further, neither Sone nor Zampini disclose "decompressing" the beginning of the second musical file.

Lee teaches the decoding of MP3 files for a playback on a karaoke device (Col. 2, lines 42-46)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone and Zampini et al. as taught in Lee to allow the karaoke device to use MP3 files instead of MIDI format. The use of compressed MP3 files would allow a karaoke machine to store more music files locally and, if necessary, download additional songs from the network, thus enhancing user experience. Because MP3 files are highly compressed, the system using MP3 files would inherently have to decode at least parts of the files in order to identify their characteristics (volume, rhythm, etc), as disclosed by Sone.

As per claims 20-21, Sone discloses that the end time for first song and start time for the second songs are determined (FIG. 2) by "sabi" markers that signify the beginning and ends of the cross-fading sections, because sabi pieces do not get altered in cross-fading and thus specify ultimate bounds for the cross-fading section. In addition, FIG. 7(B) shows the interaction between the first and second songs' envelopes, where cross-fading is performed by matching the volume envelopes (Col. 9, lines 31-36), i.e. decreasing the volume of first song and slowly increasing the volume of the second song.

As per claim 22 and 30, Sone discloses:

- a karaoke device capable of medley playback using MIDI format (Col. 6, line 62).

- automatically analyzing the beginning of the last song with the beginning of the next song in order to determine if the characteristics (such as volume and rhythm) of the songs match (Col. 8, lines 48-55)
- preloading the characteristics of music data ahead of the actual playback (Col. 8, lines 24 - 28)
- Performing cross-fading, as shown in FIG. 7(B), where it is performed by matching the volume envelopes (Col. 9, lines 31-36), i.e. decreasing the volume of first song and slowly increasing the volume of the second song.

Sone does not disclose "storing the plurality of characteristics in at least one characteristics file associated with the first or the second digital audio file."

Zampini teaches "storing" user-defined cross-fading settings (Col. 4, lines 53-56) and (Col. 8, lines 54-58). This configuration is stored in non-volatile memory of the computer (Col. 5, line 1) and hence, inherently, can be in the form of computer files.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone as taught by Zampini, in order to maintain a permanent record of user settings associated with audio file cross-fading. This would allow the user to import, export and re-use the same settings for multiple audio files, thus greatly enhancing the usability of the system. Additionally, file characteristics stored in MP3 tags would simplify system's task in choosing appropriate cross-fading mode.

Neither Sone nor Zampini et al. disclose "decompressing" the beginning of the second musical file.

Lee teaches the decoding of MP3 files for a playback on a karaoke device (Col. 2, lines 42-46)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sone and Zampini et al. as taught in Lee to allow the karaoke device to use MP3 files instead of MIDI format. The use of compressed MP3 files would allow a karaoke machine to store more music files locally and, if necessary, download additional songs from the network, thus enhancing user experience. Because MP3 files are highly compressed, the system using MP3 files would inherently have to decode at least parts of the files in order to identify their characteristics (volume, rhythm, etc), as disclosed by Sone.

As per claims 26-27, Sone discloses that the end time for first song and start time for the second songs are determined (FIG. 2) by "sabi" markers that signify the beginning and ends of the cross-fading sections, because sabi pieces do not get altered in cross-fading and thus specify ultimate bounds for the cross-fading section. In addition, FIG. 7(B) shows the interaction between the first and second songs' envelopes, where cross-fading is performed by matching the volume envelopes (Col. 9, lines 31-36), i.e. decreasing the volume of first song and slowly increasing the volume of the second song.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Brant whose telephone number is (703) 305-8954. The examiner can normally be reached on Mon. - Fri. (8:30am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 306-3011. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Tech Center 2600 receptionist whose telephone number is (703) 305- 4700.

DB
7/15/04

W. R. YOUNG
PRIMARY EXAMINER